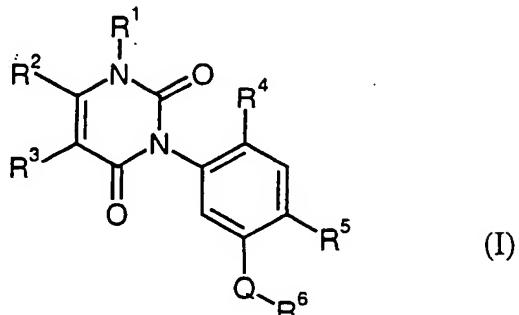


Patent Claims

1. Substituted phenyluracils of the general formula (I)



5

in which

Q represents O (oxygen), S (sulphur), SO or SO_2 ,

10 R¹ represents hydrogen, amino, optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl having 1 to 4 carbon atoms or in each case optionally halogen-substituted alkenyl or alkinyl having in each case 2 to 4 carbon atoms,

15 R² represents cyano, carboxyl, carbamoyl, thiocarbamoyl or in each case
optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl or
alkoxy-carbonyl having in each case 1 to 4 carbon atoms,

R^4 represents hydrogen, nitro, cyano or halogen.

R⁶ represents an optionally nitro-, hydroxyl-, mercapto-, amino-, cyano-, carboxyl-, carbamoyl-, halogen-, C₁-C₄-alkyl-, cyano-C₁-C₄-alkyl-, carboxyl-C₁-C₄-alkyl-, C₁-C₄-halogenoalkyl-, C₁-C₄-alkoxy-C₁-C₄-alkyl-, C₁-C₄-alkoxy-carbonyl-C₁-C₄-alkyl-, C₁-C₄-alkylamino-carbonylalkyl-, di-(C₁-C₄-alkyl)-aminocarbonylalkyl-, C₁-C₄-alkoxy-, cyano-C₁-C₄-alkoxy-, C₁-C₄-halogenoalkoxy-, C₁-C₄-alkoxy-C₁-C₄-alkoxy-, carboxyl-C₁-C₄-alkoxy-, C₁-C₄-alkoxy-carbonyl-C₁-C₄-alkoxy-, C₁-C₄-alkylaminocarbonyl-C₁-C₄-alkoxy-, di-(C₁-C₄-alkyl)-aminocarbonyl-C₁-C₄-alkoxy-, C₁-C₄-alkoxy-carbonyl-, C₂-C₄-alke-nyloxy-, C₂-C₄-alkinyloxy-, C₁-C₄-alkylthio-, C₁-C₄-halogenoalkylthio-, C₁-C₄-alkylsulphinyl-, C₁-C₄-halogenoalkylsulphinyl-, C₁-C₄-alkylsulphonyl-, C₁-C₄-halogenoalkylsulphonyl-, C₁-C₄-alkyl-carbonyl-amino-, C₁-C₄-alkoxy-carbonyl-amino- or C₁-C₄-alkyl-sulphonyl-amino-substituted nitrogen-containing heterocyclic grouping from the group consisting of pyrrolyl, pyrazolyl, imidazolyl, triazolyl, triazolinyl, pyridinyl, pyrazinyl, pyridazinyl, pyrimidinyl, triazinyl, benzoxazolyl, benzothiazolyl, quinolinyl, quinazolinyl, quinoxalinyl,

20

- including all possible tautomeric forms of the compounds of the general formula (I) and the possible salts and acid or base adducts of the compounds of the general formula (I).

25

2. Compounds according to Claim 1, characterized in that

Q represents O (oxygen), S (sulphur) or SO₂,

30

R¹ represents hydrogen, amino, in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl,

or in each case optionally fluorine- and/or chlorine-substituted propenyl or propinyl,

5 R² represents cyano, carboxyl, carbamoyl, thiocarbamoyl or in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl,

10 R³ represents hydrogen, fluorine, chlorine, bromine or in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl,

15 R⁴ represents hydrogen, cyano, fluorine, chlorine or bromine,

20 R⁵ represents cyano, thiocarbamoyl, bromine or in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, methoxy or ethoxy, and

25 R⁶ represents an in each case optionally nitro-, hydroxyl-, amino-, cyano-, carboxyl-, carbamoyl-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, chloromethyl-, fluoromethyl-, dichloromethyl-, difluoromethyl-, trichloromethyl-, trifluoromethyl-, chlorodifluoromethyl-, fluorodichloromethyl-, chloroethyl-, fluoroethyl-, dichloroethyl-, difluoroethyl-, chlorofluoroethyl-, trichloroethyl-, trifluoroethyl-, chlorodifluoroethyl-, fluorodichloroethyl-, tetrafluoroethyl-, chlorotrifluoroethyl-, pentafluoroethyl-, chloro-n-propyl-, fluoro-n-propyl-, chloro-i-propyl-, fluoro-i-propyl-, dichloropropyl-, difluoropropyl-, trichloropropyl-, trifluoropropyl-, cyanomethyl-, cyanoethyl-, cyanopropyl-, carboxymethyl-, carboxyethyl-, carboxypropyl-, methoxymethyl-, ethoxymethyl-, propoxymethyl-, methoxyethyl-, ethoxyethyl-, methoxycarbonylmethyl-, ethoxycarbonylmethyl-,

n- or i-propoxycarbonylmethyl-, methylaminocarbonylmethyl-, ethylaminocarbonylmethyl-, dimethylaminocarbonylmethyl-, methoxycarbonylethyl-, ethoxycarbonylethyl-, n- or i-propoxycarbonylethyl-, methoxy-, ethoxy-, n- or i-propoxy-, n-, i-, s- or t-butoxy-, difluoromethoxy-, trifluoromethoxy-, chlorodifluoromethoxy-, carboxymethoxy-, carboxyethoxy-, methoxycarbonylmethoxy-, ethoxycarbonylmethoxy-, n- or i-propoxycarbonylmethoxy-, methylaminocarbonylmethoxy-, ethylaminocarbonylmethoxy-, dimethylaminocarbonylmethoxy-, methoxycarbonylethoxy-, ethoxycarbonylethoxy-, n- or i-propoxycarbonylethoxy-, methylaminocarbonylethoxy-, ethylaminocarbonylethoxy-, dimethylaminocarbonylethoxy-, methoxycarbonyl-, ethoxycarbonyl-, n- or i-propoxycarbonyl-, propenyl-
oxy-, butenyoxy-, propinyloxy-, butinyloxy-, methylthio-, ethylthio-, n- or i-propylthio-, n-, i-, s- or t-butylthio-, difluoromethylthio-, trifluoromethylthio-, chlorodifluoromethylthio-, methylsulphinyl-, ethylsulphinyl-, n- or i-propylsulphinyl-, trifluoromethylsulphinyl-, methylsulphonyl-, ethylsulphonyl-, n- or i-propylsulfonyl-, trifluoromethylsulphonyl-, acetylamino-, propionylamino-, n- or i-butyroylamino-, methoxycarbonylamino-, ethoxycarbonylamino-, n- or i-propoxy-
carbonylamino-, methylsulphonylamino-, ethylsulphonylamino-, n- or i-propylsulphonylamino-substituted nitrogen-containing heterocyclic grouping form the group consisting of pyrrolyl, pyrazolyl, imidazolyl, triazolyl, triazolinyl, pyridinyl, pyrazinyl, pyridazinyl, pyrimidinyl, triazinyl, benzoxazolyl, benzothiazolyl, quinolinyl, quinazolinyl, quinoxalinyl.

3. Compounds according to Claim 1 or 2, characterized in that

Q represents O (oxygen) or S (sulphur),

R¹ represents hydrogen, amino or represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl or ethyl,

5 R² represents cyano, carboxyl, carbamoyl or in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, methoxycarbonyl or ethoxycarbonyl,

10 R³ represents hydrogen, fluorine, chlorine, bromine or in each case optionally fluorine- and/or chlorine-substituted methyl or ethyl,

R⁴ represents hydrogen, fluorine or chlorine,

15 R⁵ represents cyano, thiocarbamoyl, bromine or trifluoromethyl, and

20 R⁶ represents an in each case optionally nitro-, hydroxyl-, amino-, cyano-, carboxyl-, carbamoyl-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, dichloromethyl-, difluoromethyl-, trichloromethyl-, trifluoromethyl-, chlorodifluoromethyl-, fluorodichloromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, n-, i-, s- or t-butoxy-, difluoromethoxy-, trifluoromethoxy-, chlorodifluoromethoxy-, carboxymethoxy-, carboxyethoxy-, methoxycarbonylmethoxy-, ethoxycarbonylmethoxy-, n- or i-propoxycarbonylmethoxy-, methoxycarbonylethoxy-, ethoxycarbonylethoxy-, n- or i-propoxycarbonylethoxy-, methoxycarbonyl-, ethoxycarbonyl-, propenyloxy-, butenyloxy-, propinyloxy-, butinyloxy-, methylthio-, ethylthio-, n- or i-propylthio-, n-, i-, s- or t-butylthio-, difluoromethylthio-, trifluoromethylthio-, chlorodifluoromethylthio-, methylsulphinyl-, ethylsulphinyl-, n- or i-propylsulphinyl-, trifluoromethylsulphinyl-, methylsulphonyl, ethylsulphonyl-, n- or i-propylsulphonyl-, trifluoromethylsulphonyl-, acetylamino-, propionylamino-, n- or i-butyroylamino-, methoxycarbonylamino-, ethoxycarbonylamino-, n- or

i-propoxycarbonylamino-, methylsulphonylamino-, ethylsulphonylamino-, n- or i-propylsulphonylamino-substituted nitrogen-containing heterocyclic grouping from the group consisting of pyrrolyl, pyrazolyl, imidazolyl, triazolyl, triazolinyl, pyridinyl, pyrazinyl, pyridazinyl, 5 pyrimidinyl, triazinyl, benzoxazolyl, benzothiazolyl, quinolinyl, quinazolinyl, quinoxalinyl.

4. Compounds according to any of Claims 1 to 3, characterized in that

10 R^1 represents hydrogen, amino, methyl or ethyl,

R^2 represents cyano or trifluoromethyl,

15 R^3 represents hydrogen, chlorine or methyl,

R^5 represents cyano, thiocarbamoyl or bromine, and

20 R^6 represents in each case optionally hydroxyl-, amino-, cyano-, carboxyl-, carbamoyl-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, dichloromethyl-, difluoromethyl-, trichloromethyl-, trifluoromethyl-, chlorodifluoromethyl-, fluorodichloromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, difluoromethoxy-, trifluoromethoxy-, chlorodifluoromethoxy-, carboxymethoxy-, carboxyethoxy-, methoxycarbonylmethoxy-, ethoxycarbonylmethoxy-, 25 n- or i-propoxycarbonylmethoxy-, methoxycarbonylethoxy-, ethoxy-carbonylethoxy-, n- or i-propoxycarbonylethoxy-, methoxycarbonyl-, ethoxycarbonyl-, propenyloxy-, butenyloxy-, propinyloxy-, butinyl-oxy-, methylthio-, ethylthio-, n- or i-propylthio-, difluoromethylthio-, trifluoromethylthio-, chlorodifluoromethylthio-, methylsulphinyl-, ethylsulphinyl-, n- or i-propylsulphinyl-, trifluoromethylsulphinyl-, 30 methylsulphonyl-, ethylsulphonyl-, n- or i-propylsulfonyl-, trifluoro-

methylsulphonyl-, acetylamino-, propionylamino-, n- or i-butyroyl-
amino-, methoxycarbonylamino-, ethoxycarbonylamino-, n- or i-
propoxycarbonylamino-, methylsulphonylamino-, ethylsulphonyl-
amino-, n- or i-propylsulphonylamino-substituted pyrazolyl, pyridinyl,
5 pyrimidinyl, triazinyl or benzoxazolyl.

5. Compounds according to any of Claims 1 to 4, characterized in that

10 R¹ represents hydrogen, amino or methyl,

R² represents trifluoromethyl,

R⁵ represents cyano or bromine, and

15 R⁶ represents in each case optionally hydroxyl-, amino-, cyano-, fluorine-,
chlorine-, methyl-, ethyl-, trichloromethyl-, methoxy- or ethoxy-
substituted pyrazolyl, pyridinyl, pyrimidinyl or benzoxazolyl.

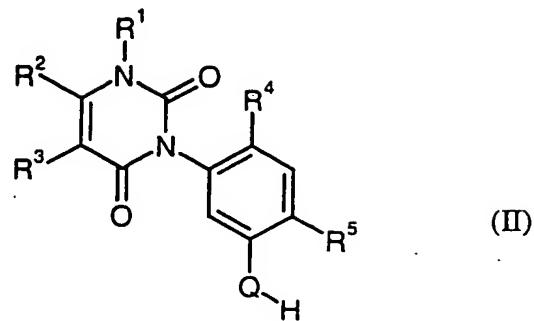
6. Compounds according to any of Claims 1 to 5, characterized in that

20 Q represents O (oxygen).

7. Process for preparing compounds according to any of Claims 1 to 6,
characterized in that

25

(a) phenyluracils of the general formula (II)



in which

Q, R¹, R², R³, R⁴ and R⁵ are each as defined in any of Claims 1 to 6

5

are reacted with compounds of the general formula (III)



in which

10

R⁶ is as defined in any of Claims 1 to 5 and

X¹ represents halogen or alkylsulphonyl,

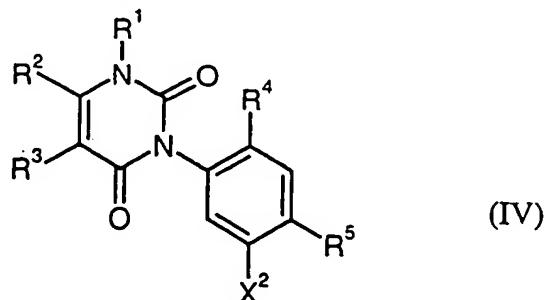
15

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

or that

20

(b) halogenophenyluracils of the general formula (IV)



in which

R^1, R^2, R^3, R^4 and R^5 are each as defined in any of Claims 1 to 5 and

5 X^2 represents halogen

are reacted with compounds of the general formula (V)

$M-Q-R^6$ (V)

10 in which

Q and R^6 are each as defined in any of Claims 1 to 6 and

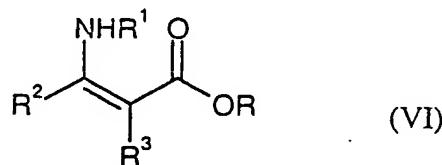
15 M represents hydrogen or a metal equivalent,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

or that

20

(c) aminoalkenoic acid esters of the general formula (VI)

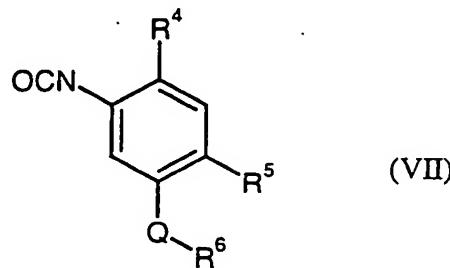


in which

25 R^1, R^2 and R^3 are each as defined in any of Claims 1 to 5 and

R represents alkyl, aryl or arylalkyl,

are reacted with substituted phenyl isocyanates of the general formula (VII)

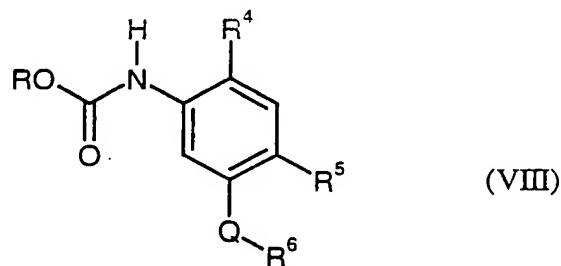


in which

5

Q, R⁴, R⁵ and R⁶ are each as defined in any of Claims 1 to 6

or with substituted phenylurethanes (phenylcarbamates) of the general formula (VIII)



10

in which

Q, R⁴, R⁵ and R⁶ are each as defined in any of Claims 1 to 6 and

15

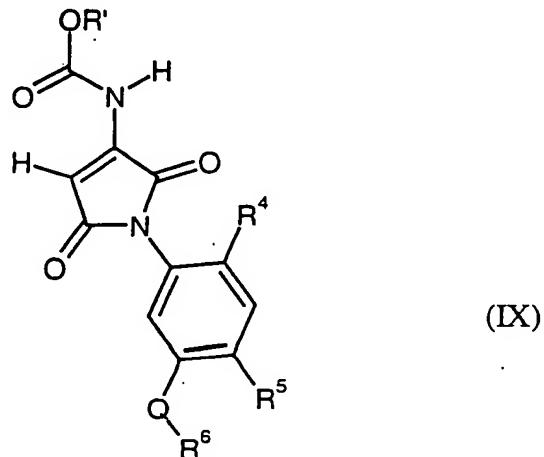
R represents alkyl, aryl or arylalkyl,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

20

or that

(d) substituted N-phenyl-1-alkoxycarbonylamino-maleimides of the general formula (IX)



in which

5

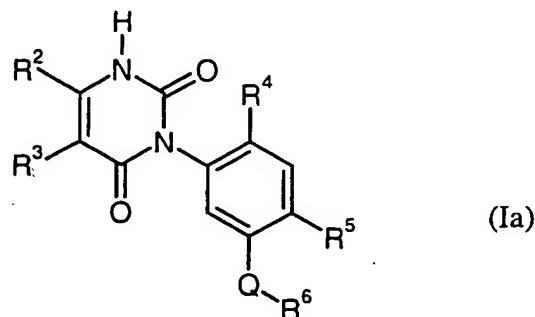
Q, R⁴, R⁵ and R⁶ are each as defined in any of Claims 1 to 6 and

R' represents alkyl

10 are reacted with a metal hydroxide in the presence of water and, if appropriate in the presence of an organic solvent,

or that

15 (e) substituted phenyluracils of the general formula (Ia)



in which

Q, R², R³, R⁴, R⁵ and R⁶ are each as defined in any of Claims 1 to 6

are reacted with 1-aminoxy-2,4-dinitro-benzene or 2-aminoxy-sulphonyl-1,3,5-trimethylbenzene or with alkylating agents of the general formula (X)

5



in which

10 A¹ represents optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl having 1 to 4 carbon atoms or in each case optionally halogen-substituted alkenyl or alkinyl having in each case 2 to 4 carbon atoms, and

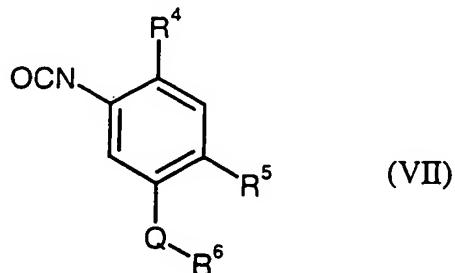
15 X³ represents halogen or the grouping -O-SO₂-O-A¹,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

20 and electrophilic or nucleophilic and/or oxidation or reduction reactions within the scope of the definition of the substituents are, if appropriate, subsequently carried out in a customary manner.

8. Compounds of the formula (VII)

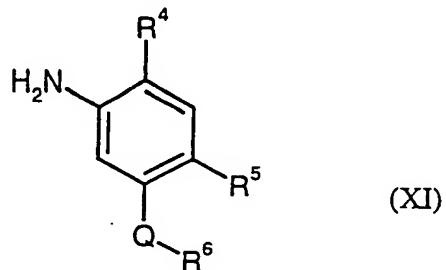
25



in which

Q, R⁴, R⁵ and R⁶ are each as defined in any of Claims 1 to 6.

9. Process for preparing compounds according to Claim 8, characterized in that
5 aniline derivatives of the general formula (XI)



in which

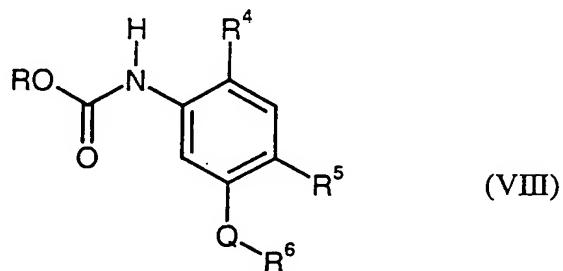
10

Q, R⁴, R⁵ and R⁶ are each as defined in any of Claims 1 to 6

are reacted with phosgene in the presence of a diluent, such as, for example, chlorobenzene, at temperatures between -20°C and +150°C.

15

10. Compounds of the formula (VIII)

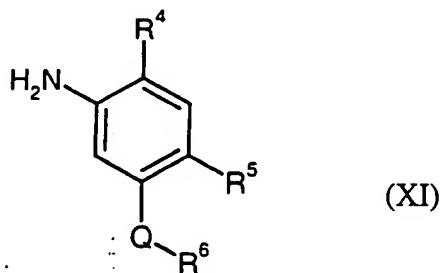


in which

20

Q, R⁴, R⁵, R⁶ and R are each as defined in any of Claims 1 to 7.

11. Process for preparing compounds according to Claim 10, characterized in that aniline derivatives of the general formula (XI)

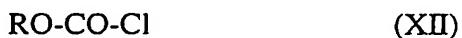


5 in which

Q , R^4 , R^5 and R^6 are each as defined in any of Claims 1 to 6

are reacted with chlorocarbonyl compounds of the general formula (XII)

10



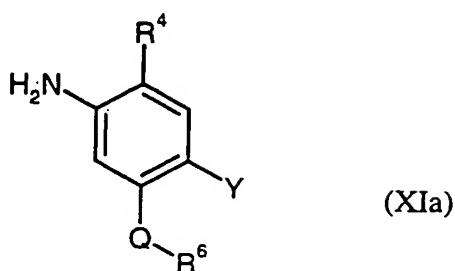
in which

15 R represents alkyl, aryl or arylalkyl,

if appropriate in the presence of an acid acceptor, such as, for example, pyridine, and if appropriate in the presence of a diluent, such as, for example, methylene chloride, at temperatures between -20°C and $+100^{\circ}\text{C}$.

20

12. Compounds of the formula (XIa)



in which

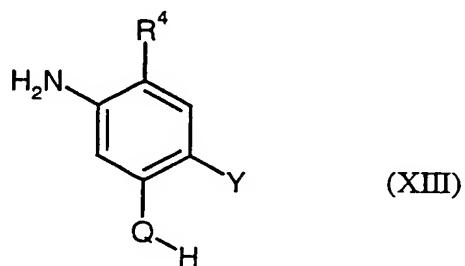
Q, R⁴ and R⁶ are each as defined in any of Claims 1 to 6 and

5

Y represents cyano, thiocarbamoyl or trifluoromethyl.

13. Process for preparing compounds according to Claim 12, characterized in that

10 (α) anilines of the general formula (XIII)



in which

Q, R⁴ and Y are each as defined in any of Claims 1 to 6 and 12

15

are reacted with compounds of the general formula (III)



in which

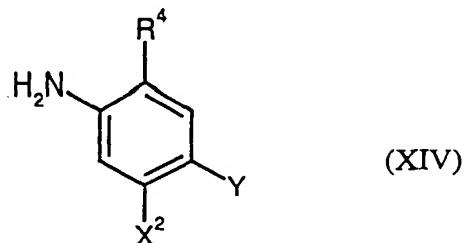
20

R⁶ and X¹ are each as defined in any of Claims 1 to 5 and 7,

if appropriate in the presence of an acid acceptor, such as, for example, potassium hydroxide, potassium carbonate or pyridine, and if appropriate in the presence of a diluent, at temperatures between 0°C and 200°C,

5 or that

(β) anilines of the general formula (XIV)



in which

10 R^4 , X^2 and Y are each as defined in any of Claims 1 to 5, 7 and 12

are reacted with compounds of the general (V)

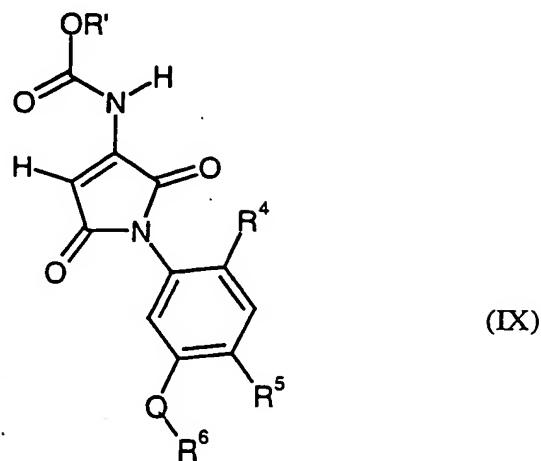
15 $M-Q-R^6$ (V)

in which

M , Q and R^6 are each as defined in any of Claims 1 to 7,

20 if appropriate in the presence of an acid acceptor and if appropriate in the presence of a diluent, at temperatures between 0°C and 200°C.

14. Compounds of the formula (IX)

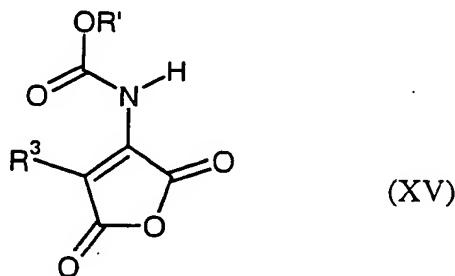


in which

Q, R⁴, R⁵ and R⁶ are each as defined in any of Claims 1 to 6 and R' represents alkyl.

15. Process for preparing compounds according to Claim 14, characterized in that alkyl (2,5-dioxo-2,5-dihydro-furan-3-yl)-carbamates of the general formula (XV)

10



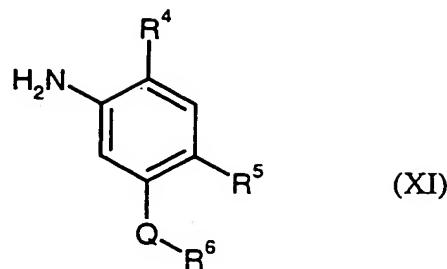
in which

R³ is as defined in any of Claims 1 to 5 and

15

R' represents alkyl

are reacted with aniline derivatives of the general formula (XI)



in which

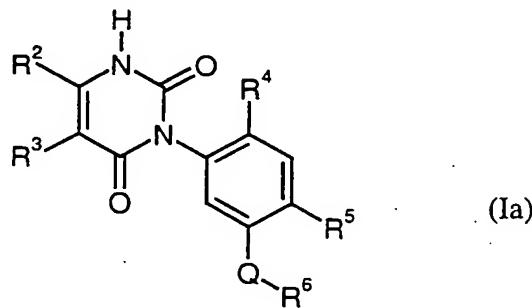
Q , R^4 , R^5 and R^6 are each as defined in any of Claims 1 to 6,

5

if appropriate in the presence of a diluent, at temperatures between 0°C and 200°C .

16. Compounds of the formula (Ia)

10



in which

Q , R^2 , R^3 , R^4 , R^5 and R^6 are each as defined in any of Claims 1 to 6.

15

17. Herbicidal compositions, characterized in that they comprise at least one compound according to any of Claims 1 to 6 and customary extenders.

20 18. Use of at least one compound according to any of Claims 1 to 6 or a composition according to Claim 17 for controlling undesirable plants.